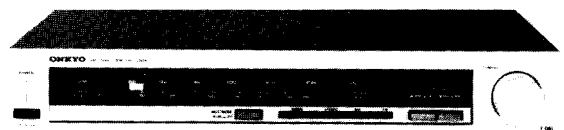
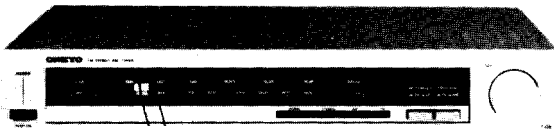


ONKYO®**SERVICE MANUAL****FM STEREO/AM TUNER
MODEL T-06****FM STEREO/MW/LW TUNER
MODEL T-06L****TABLE OF CONTENTS**

Item	Page
Specifications	2
Block diagram (D/W models)	3
Block diagram (G model)	4
Block diagram (T-06L)	5
Exploded view (T-06)	6
Parts list (T-06)	7
Exploded view (T-06L)	8
Parts list (T-06L)	9
Stringing diagram	10
Precautions	10
Adjustment procedures	10
Pc board-parts list (120V model)	13
Pc board view (120V model)	14
Schematic diagram (120V model)	15
Pc board-parts list/view (220V model)	17
Schematic diagram (220V model)	19
Pc board-parts list/view (W model)	21
Schematic diagram (W model)	23
Pc board view/parts list (T-06L)	25
Schematic diagram (T-06L)	27
Packing procedures	29

ONKYO®
AUDIO COMPONENTS

SPECIFICATIONS

T-06

FM Section

Tuning Range :	87.5 — 108 MHz
Usable Sensitivity	Mono : 2 μ V, 11.2 dBf IHF 1.8 μ V (S/N 26 dB, 40 kHz, Devi.) DIN
	Stereo : 4 μ V, 17.2 dBf IHF 50 μ V (S/N 46dB, 40 kHz Devi.) DIN

50 dB Quieting

Sensitivity :	Mono : 18.3 dBf, 4.5 μ V
	Stereo : 39.2 dBf, 50 μ V

Capture Ratio : 1.5 dB

Image Rejection Ratio : 35 dB

IF Rejection Ratio : 80 dB

Signal-to-Noise Ratio : Mono : 70 dB

Stereo : 63 dB

Alternate Channel Att.: 55 dB IHF ($\pm$ 400 kHz) (D/W model)

Selectivity : 50 dB (DIN)-
($\pm$ 300 kHz, 40 kHz Devi.) (G model)

AM Suppression Ratio : 50 dB

Harmonic Distortion : Mono : 0.15%

Stereo : 0.4%

Stereo Separation : 40 dB at 1 kHz

30 dB at 100 — 10,000 Hz

Muting Level : 17.2 dBf, 4 μ V

Frequency Response : 40 — 15,000 Hz $\pm$ 1.5 dB

AM Section

Tuning Range : 530 — 1,620 kHz

Usable Sensitivity : 25 μ V

Image Rejection Ratio : 40 dB

IF Rejection Ratio : 30 dB

Signal-to-Noise Ratio : 40 dB

Harmonic Distortion : 0.8%

GENERAL

Power Supply Rating : AC 120 V, 60 Hz (D model)
AC 220 V, 50 Hz (G model)
AC 120/220 V, 50/60 Hz, (W model)
AC 240 V, 50 Hz (Q model)

Output Voltage : FM : 500 mV

AM : 150 mV

Antennas : FM : 300 ohms balanced and 75
ohms unbalanced
AM : built-in loop antenna and exter-
nal terminal

Semiconductors : 1 FET, 3 ICs, 4 transistors, 5 diodes, 7
LEDs (D/W models)

1 FET, 3 ICs, 5 transistors, 5 diodes,
7 LEDs (G/Q models)

Dimensions : 418(W) x 72(H) x 286(D) mm

16-1/2" x 2-7/8" x 11-1/4"

Weight : 2.9 kg (6.4 lbs)

Due to further product improvements, specifications are subject to
change without notice.

T-06L

FM Section

Tuning Range :	87.5 — 108 MHz
Usable Sensitivity :	Mono : 2 μ V, 11.2 dBf IHF 1.8 μ V (S/N 26 dB, 40 kHz, Devi.) DIN
	Stereo : 4 μ V, 17.2 dBf IHF 50 μ V (S/N 46 dB, 40 kHz Devi.) DIN

50 dB Quieting

Sensitivity :	Mono : 4.5 μ V, 18.3 dBf
	Stereo : 50 μ V, 39.2 dBf

Capture Ratio : 1.5 dB

Image Rejection Ratio : 35 dB

IF Rejection Ratio : 80 dB

Signal-to-Noise Ratio : Mono : 70 dB

Stereo : 63 dB

Selectivity : 50 dB (DIN)
($\pm$ 300 kHz, 40 kHz Devi.)

AM Suppression Ratio : 50 dB

Harmonic Distortion : Mono : 0.15%

Stereo : 0.4%

Stereo Separation : 40 dB at 1 kHz

30 dB at 100 — 10,000 Hz

Frequency Response : 40 — 15,000 Hz $\pm$ 1.5 dB

AM Section (MW/LW)

Tuning Range : MW : 525 — 1620 kHz

LW : 150 — 370 kHz

Usable Sensitivity : MW : 25 μ V

LW : 60 μ V

Image Rejection Ratio : MW : 40 dB

LW : 40 dB

IF Rejection Ratio : MW : 30 dB

LW : 25 dB

Signal-to-Noise Ratio: MW : 40 dB

LW : 36 dB

Harmonic Distortion : MW/LW : 0.8%

GENERAL

Output voltage : FM : 500 mV

MW/LW ; 150 mV

Antennas : FM : 300 ohms balanced and 75
ohms unbalanced.

AM

(MW/LW) : built-in loop antenna and
external terminal

Semiconductors : 2FETs, 3 ICs, 4 transistors, 5 diodes, 8
LEDs

Dimensions : 418(W) x 72(H) x 286(D) mm

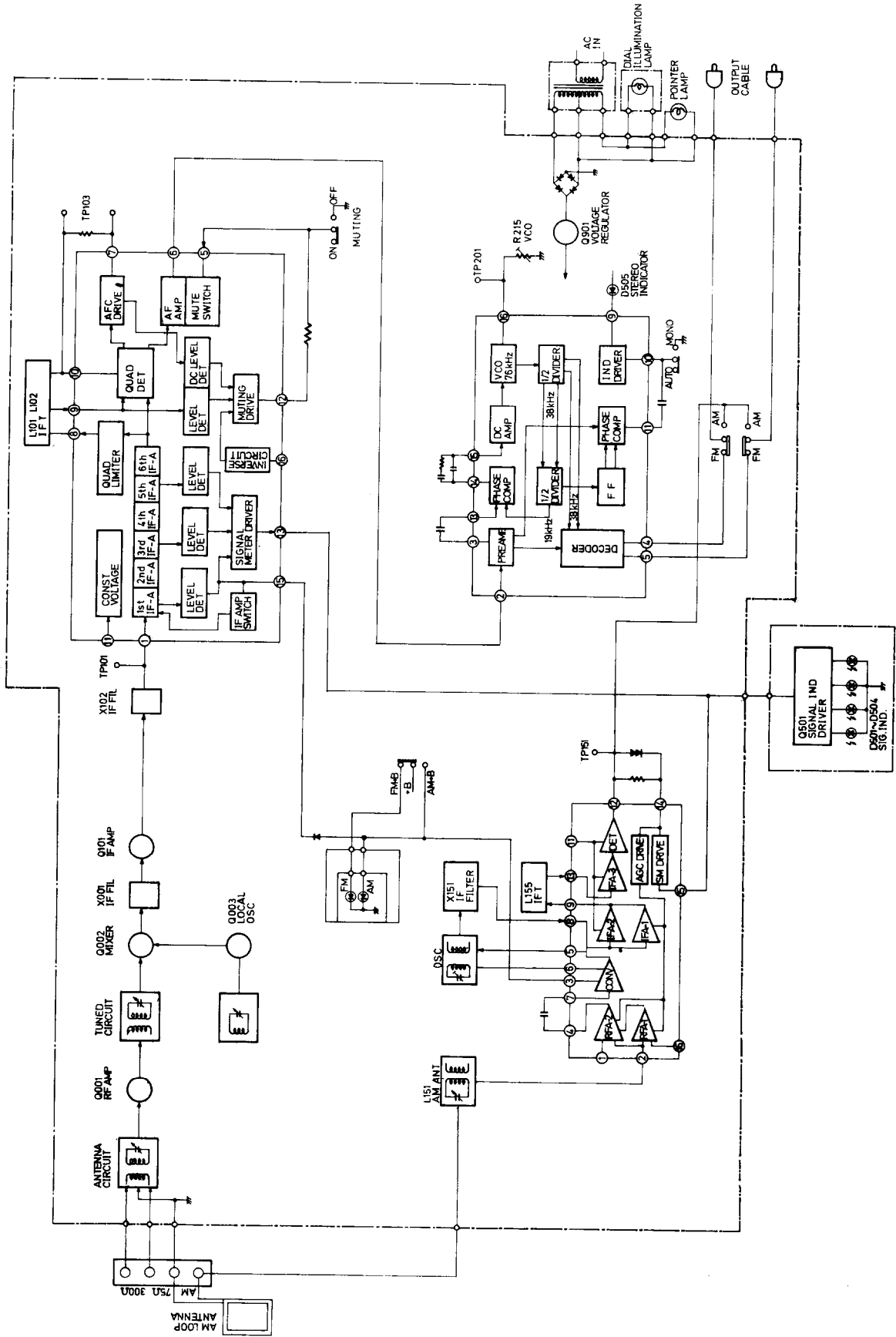
16-1/2" x 2-7/8" x 11-1/4"

Weight : 2.9 kg (6.4 lbs.)

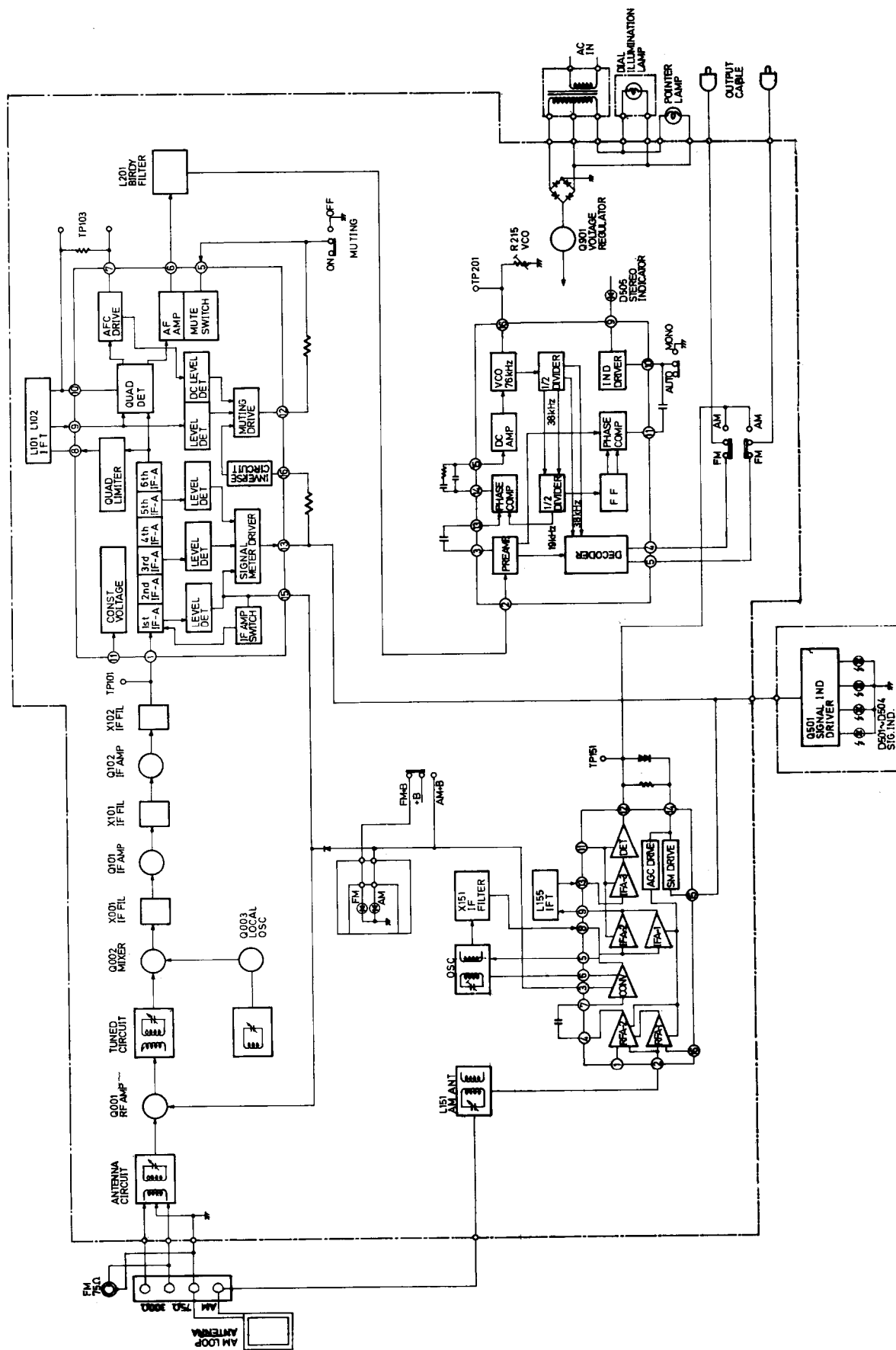
Power supply : AC 220V, 50 Hz

Due to further product improvements, specifications are subject to
change without notice.

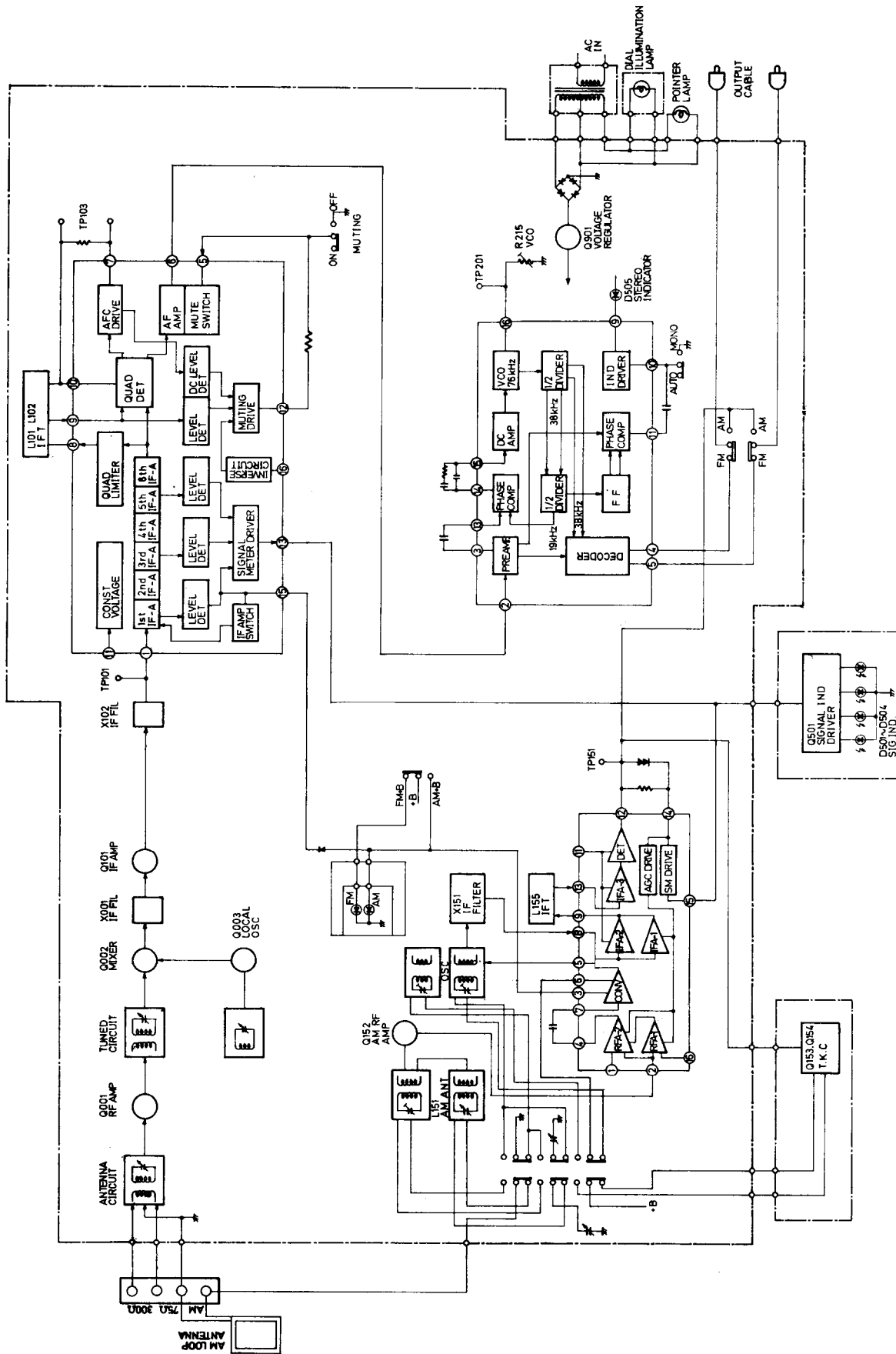
BLOCK DIAGRAM D/W models



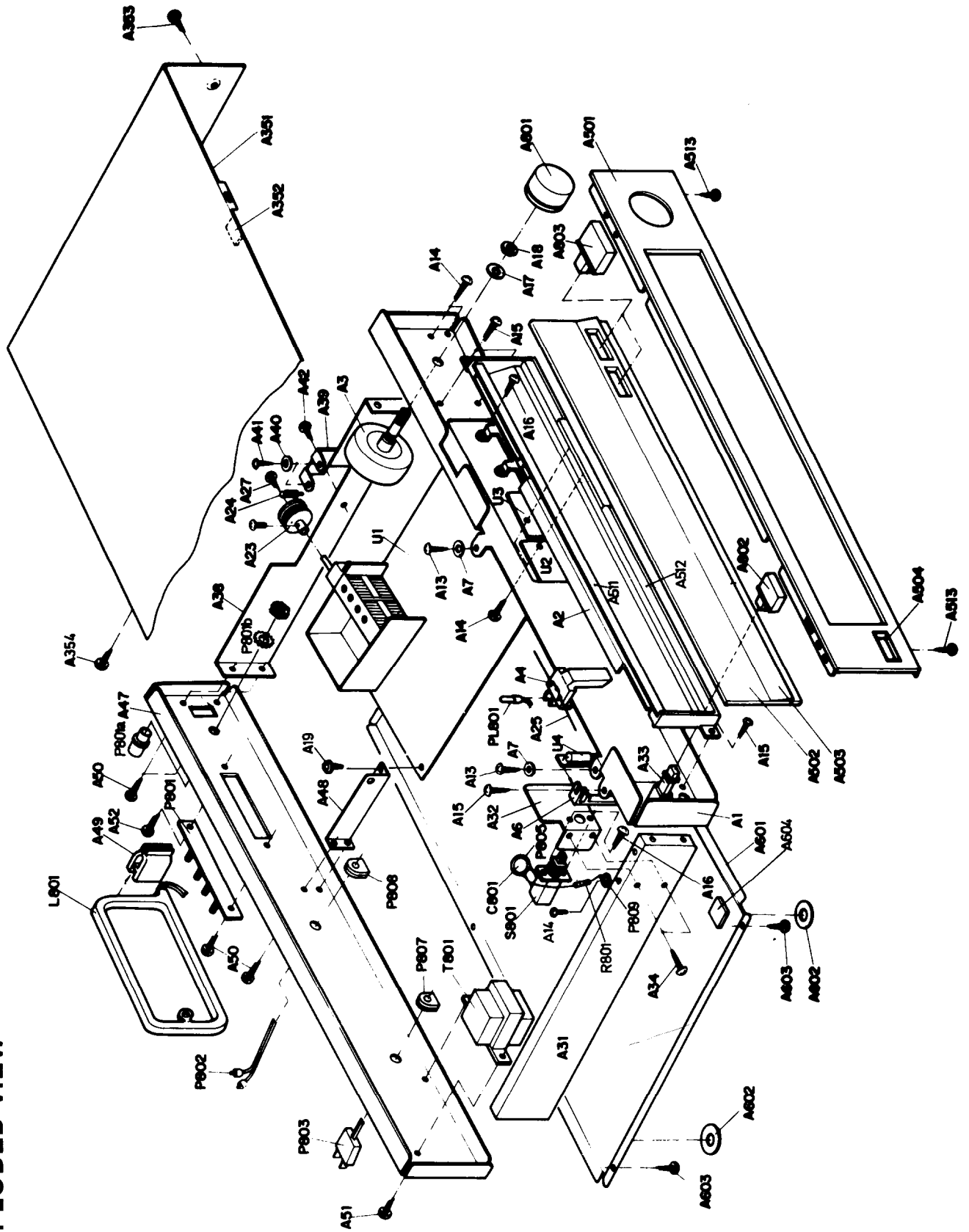
BLOCK DIAGRAM G model



BLOCK DIAGRAM T-06L



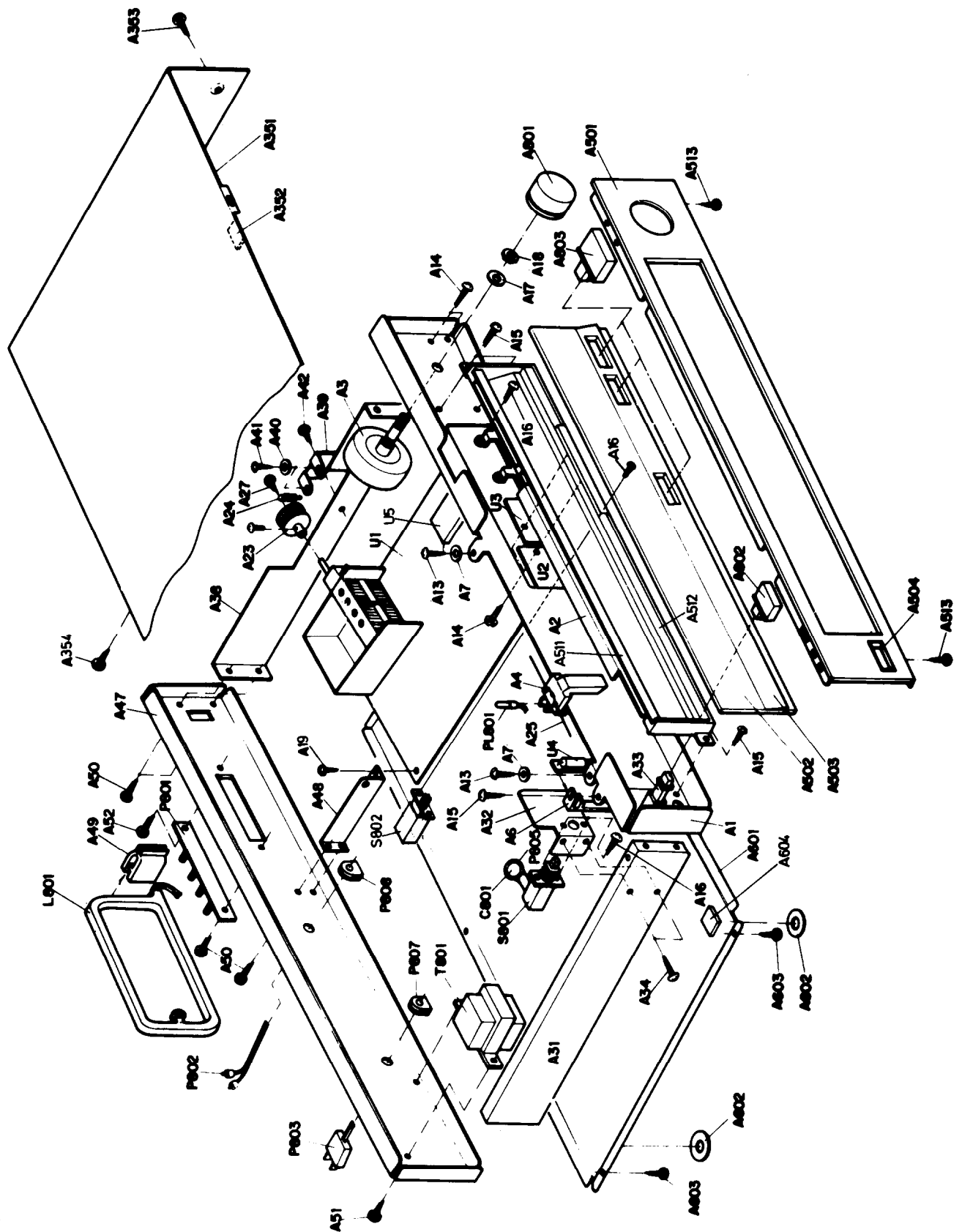
EXPLODED VIEW



PARTS LIST

REF. NO.	PARTS NO.	DESCRIPTION	REF. NO.	PARTS NO.	DESCRIPTION	REF. NO.	PARTS NO.	DESCRIPTION
A1	27110139B	Front bracket	A501	13238121	Front panel ass'y	U1	13238525E	NARF-1125e, FM/AM tuner pc board
A2	27190118B	Holder	A502	13238901	Dial plate ass'y			ass'y (D)
A3	27205026	Drive shaft	A503	27262107A	Plate A		13244525F	NARF-1125f, FM/AM tuner pc board
A4	28165057A	Pointer	A504	27267109	Guide, power			ass'y (G/Q)
	28140345A	Cushion	A511	27262108B	Plate B		13240525G	NARF-1125g, FM/AM tuner pc board
A6	27190071	Holder, lamp	A512	28133052B	Back plate			ass'y (W)
A7	27185002A	DP-16, Dial pulley	A513	834130068	3TTS + 6B, Tapping screw	U2	13238526A	NADIS-1126a, Signal and stereo in-
A13	801147A	Special screw	A601	27170093A	Bottom board (D/G/Q)			dicator pc board ass'y
A14	834130068	3TTS + 6B, Tapping screw		27170105	Bottom board (W)	U3	13238512	NALED-1412, AM/FM indicator pc
A15	838130068	3TTB + 6B, Tapping screw	A602	27175011C	Leg			board ass'y
A16	82113006	3P + 6FN, Pan head screw	A603	831130068	3TTW + 6B, Tapping screw	U4	13238513	NAPL-1413, Dial illumination lamp pc
A17	87619014	W9x14F, Washer	A604	28140044	2x12x12mm, Cushion			board ass'y
A18	8631901	N-9F, Nut	A801	28320542	Knob, tuning	Note :		
A19	831130088	3TTW + 8B, Tapping screw	A802	28320573	Knob, push	(D) : Only 120V model		
A23	27200023	Dial drum	A803	28320569	Knob, selector	(G) : Only 220V model		
A24	27180044	Spring	C801	3500065A	0.01μF, 400V, Capacitor IS (D/G/W)	(W) : Only 120/220V model		
A25	273903	Stringing	C801, C802	3500065A	0.01μF, 400V, Capacitor IS (Q)	(Q) : Only 240V model		
A27	834130068	3TTS + 6B, Tapping screw		27300080	Cover, capacitor			
A28	834130088	3TTS + 8B, Tapping screw	L801	232085	NMA-3034, AM loop antenna			
A31	27115105	Side bracket, left	PL801	210119	PL6.3V50mAW2.5, Pointer lamp			
A32	27140526	Bracket, switch	P801	25060035	NTM-4PRMC06, Antenna terminal			
A33	27260062	Shaft, switch	P801a	25045088	Antenna connector (G)			
A34	838130068	3TTB + 6B, Tapping screw	P801b	870057	Toothed washer (G)			
A38	27115078A	Side bracket, right	P802	2010039	Output cable			
A39	27140403	Bracket, dial pulley	P803	253099A	AS-UC-3, Power supply cable (D)			
A40	27185002A	DP-16, Dial pulley		253083	AS-CEE, Power supply cable (G/W)			
A41	801147A	Special screw	P807	253077-1	Power supply cable (Q)			
A42	838130068	3TTB + 6B, Tapping screw		270025	SR-3P-4, Strainrelief (D)			
A47	27120396	Back panel (D)		270280	SR-4K-4, Strainrelief (G/W)			
	27120397	Back panel (G)		27300349	SR-6W-1, Strainrelief (Q)			
	27120398	Back panel (W)	P808	270025	SR-3P-4, Strainrelief			
	27120405	Back panel (Q)	P809	223004	Terminal (D)			
A48	27140444	Bracket, pc board	R801	431523355	3.3MΩ, 1/2W, Solid resistor (D)			
A49	26190105	Holder, antenna	S801	25035135	NPS-111-L100P, Power switch (D)			
A50	834130068	3TTS + 6B, Tapping screw		25035051	NPS-112-L16P, Power switch (G)			
A51	831130088	3TTW + 8B, Tapping screw (D)		25035136	NPS-121-L101P, Power switch (W/Q)			
A52	834140108	4TTS + 10B, Tapping screw (G/W/Q)	S802	25065123	NSS-1258P, Voltage selector (W)			
A351	834230108	3TTS + 10B(Ni), Tapping screw	T801	230506A	NPT-723D, Power transformer (D)			
A352	28184104	Top cover		230507	NPT-723G, Power transformer (G)			
A353	28140020	t4x10x40mm, Cushion		230508	NPT-723DG, Power transformer (W)			
A354	834430068	3TTS + 6B(BC), Tapping screw		230514	NPT-723Q, Power transformer (Q)			
	831430088	3TTW + 8B(BC), Tapping screw						

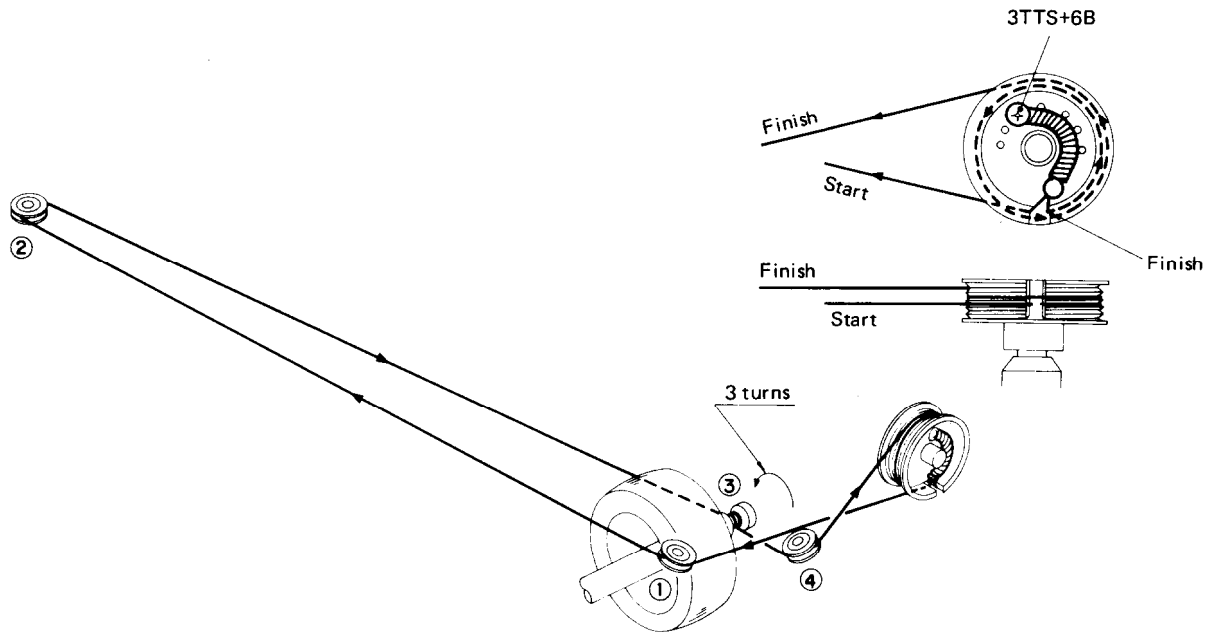
EXPLODED VIEW



PARTS LIST

REF. NO.	PARTS NO.	DESCRIPTION	REF. NO.	PARTS NO.	DESCRIPTION
A1	27110139B	Front bracket	A501	13460121	Front panel ass'y
A2	27190118B	Holder	A502	28130153A	Dial plate
A3	27205026	Drive shaft	A503	27262178B	Plate A
A4	28165057A	Pointer	A504	27267109	Guide, power
	28140345A	Cushion	A511	27262108B	Plate B
A6	27190071	Holder, lamp	A512	28133052B	Back plate
A7	27185002A	DP-16, Dial pulley	A513	834130068	3TTS + 6B, Tapping screw
A13	801147A	Special screw	A601	27170093A	Bottom board
A14	834130068	3TTS + 6B, Tapping screw	A602	27175011C	Leg
A15	838130068	3TTB + 6B, Tapping screw	A603	831130068	3TTW + 6B, Tapping screw
A16	82113006	3P + 6FN, Pan head screw	A604	28140044	2x12x12mm, Cushion
A17	87619014	W9x14F, Washer	A801	28320542	Knob, tuning
A18	8631901	N-9F, Nut	A802	28320573	Knob, push
A19	831130088	3TTW + 8B, Tapping screw	A803	28320569	Knob, selector
A23	27200023	Dial drum	C801	3500065A	0.01μF, 400V, Capacitor IS
A24	27180044	Spring	P805	27300080	Cover, capacitor
A25	273903	Stringing	L801	232085	NMA-3034, AM loop antenna
A27	834130068	3TTS + 6B, Tapping screw	PL801	210119	PL6.3V50mAW2.5, Pointer lamp
A28	834130088	3TTS + 8B, Tapping screw	P801	25060035	NTM-4PRMC06, Antenna terminal
A31	27115105	Side bracket, left	P802	2010039	Output cable
A32	27140526	Bracket, switch	P803	253083	AS-CEE, Power supply cable
A33	27260062	Shaft, switch	P807	270280	SR-4K-4, Strainrelief
A34	838130068	3TTB + 6B, Tapping screw	P808	270025	SR-3P-4, Strainrelief
A38	27115078A	Side bracket, right	S801	25035051	NPS-111-L16P, Power switch
A39	27140403	Bracket, dial pulley	T801	230507	NPT-723G, Power transformer
A40	27185002A	DP-16, Dial pulley	S802	25035248	NPS-122-L212, Muting switch
A41	801147A	Special screw	U1	13460525H	NARF-1125h, FM/AM tuner pc board ass'y
A42	838130068	3TTB + 6B, Tapping screw	U2	13238526A	NADIS-1126a, Signal and stereo indicator pc board ass'y
A47	27120399	Back panel	U3	13238512	NALED-1412, AM/FM indicator pc board ass'y
A48	27140444	Holder	U4	13238513	NAPL-1413, Dial illumination lamp pc board ass'y
A49	27190105	Holder, antenna	U5	13374532	NASW-1132, Muting circuit pc board ass'y
A50	834130068	3TTS + 6B, Tapping screw			
A51	831130088	3TTW + 8B, Tapping screw			
A52	834230108	3TTS + 10B(Ni), Tapping screw			
A351	28184104	Top cover			
A352	28140020	t4x10x40mm, Cushion			
A353	834430068	3TTS + 6B(BC), Tapping screw			
A354	831430088	3TTW + 8B(BC), Tapping screw			

STRINGING DIAGRAM



1. Close the variable capacitor complete and tie the dial cord to the spring of the drum.
2. Thread the dial cord in the direction of arrow from ① to ③ and wind the dial cord three turns around the tuning shaft counter clockwise.
3. Thread the dial cord to ④.
4. Wind the dial cord 1-1/2 turns around the dial drum.

PRECAUTIONS

1. DE-EMPHASIS SWITCH (ONLY W MODEL)

The 50 μ sec/75 μ sec selector switch employed in the W (120/220V) model is located on the bottom board. When shipped from the factory, this switch is set to the 50 μ sec position. For use in 75 μ sec regions, switch over to the 75 μ sec position.

2. VOLTAGE SELECTOR (REAR PANEL)

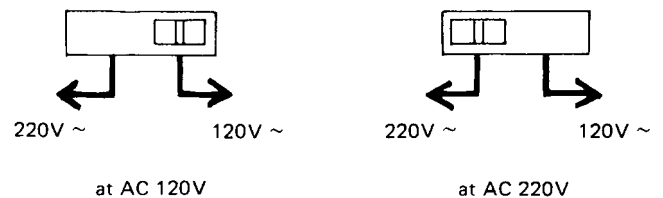
Some models are equipped with a voltage selector to conform with local power supplies.

Be sure to set this switch to match the voltage of the power supply in your area before turning the power switch on.

When changing the voltage setting, remove the lock plate covering the switch, then set the voltage to the correct value.

Voltage is changed by sliding the groove in the switch with a screwdriver to the right or left. Confirm that the switch has been moved all the way to the right or left before turning the power switch on.

If there is no voltage selector switch on the unit you have purchased, it can only be used in areas where the power supply voltage is the same as that of the unit.



ADJUSTMENT PROCEDURES

INSTRUMENTS REQUIRED

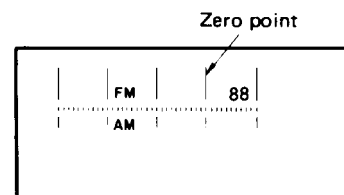
1. AM sweep generator
2. AM/FM signal generator
3. AC VTVM
4. Oscilloscope
5. Monitor scope
6. Distortion analyzer
7. Frequency counter

GENERAL ALIGNMENT CONDITIONS

1. Signal input should be kept as low as possible.
2. Standard modulation is 400Hz 30%, (AM), 1kHz 75kHz devi. (FM MONO), pilot 6.75kHz devi. sub and main 68.25kHz devi. (FM STEREO)

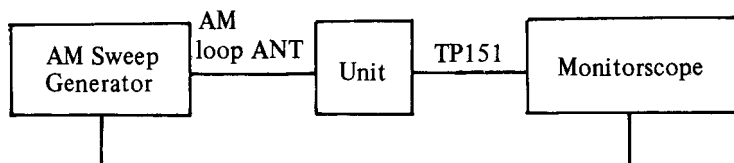
(1) Attachment of dial pointer

1. Close the variable capacitor completely.
2. Set the radio dial pointer to zero point on dial scale and secure the stringing and pointer with the bond.



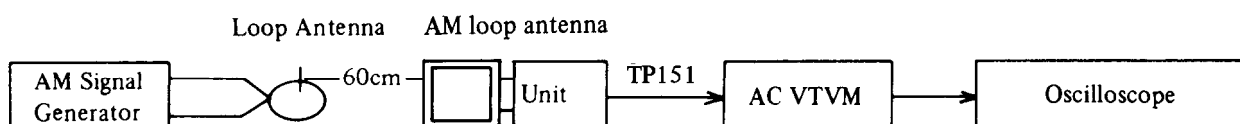
(2) AM IF ALIGNMENT

1. Set selector switch to AM.
2. Set radio dial to quiet point.



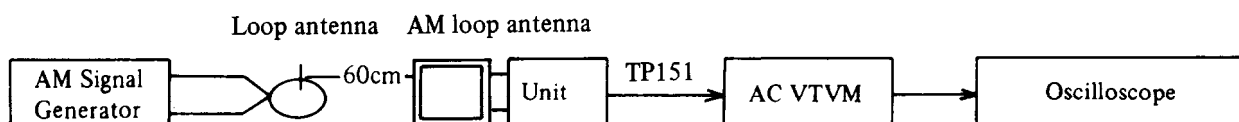
Set signal	Adjust	Monitor scope	Remarks
455kHz	X151	Maximum Symmetrical Response	Usually not necessary to adjust

(3) AM(MW) RF ALIGNMENT



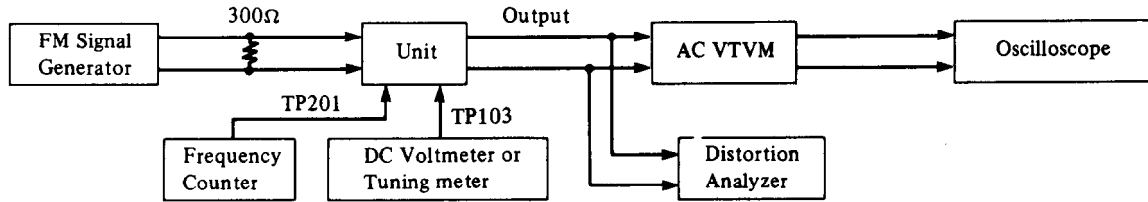
Step	Set Signal	Set Radio Dial	Adjust	VTVM reading	Remarks
1	515kHz 400Hz 30%	Lower end (515kHz)	L153	Maximum	Repeat steps 1 and 2 as necessary
2	1680kHz 400Hz 30%	Upper end (1680kHz)	TC153	Maximum	
3	600kHz 400Hz 30%	600kHz	L151	Maximum	Repeat steps 3 and 4 as necessary
4	1400kHz 400Hz 30%	1400kHz	TC151	Maximum	

(4) LW RF ALIGNMENT

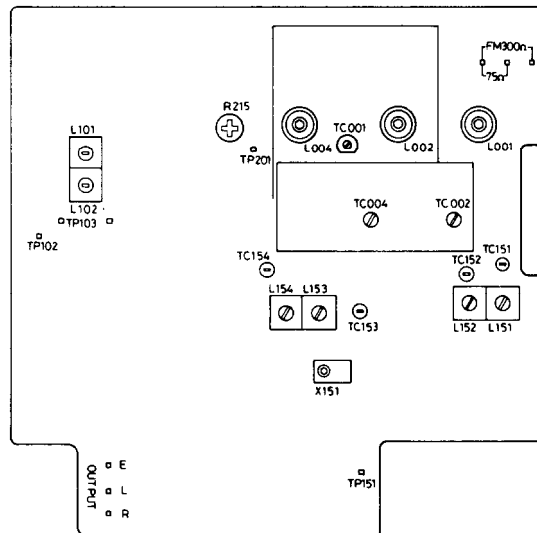


Step	Set Signal	Set Radio Dial	Adjust	VTVM reading	Remarks
1	160kHz 400Hz 30%	160kHz	L154	Maximum	Repeat steps 1 and 2 as necessary
2	360kHz 400Hz 30%	360kHz	TC154	Maximum	
3	160kHz 400Hz 30%	160kHz	L152	Maximum	Repeat steps 3 and 4 as necessary
4	360kHz 400Hz 30%	360kHz	TC152	Maximum	

(5) FM ALIGNMENT



	Step	FM Signal Generator	Dial to set	Adjust	Output Indicator	Adjust for	Remarks
IF	1	No signal	Quiet Point	L101	DC Voltmeter	0V	Repeat Steps 1 and 2 as necessary
	2	98MHz 65dBf (60dB) 1kHz 75kHz devi.	98MHz	L102	Distortion Analyzer	Minimum	
Frequency range	3	87.5MHz 65dBf (60dB)	Lower end	L004	AC VTVM or Oscilloscope	Maximum	Repeat Steps 3 and 4 as necessary
	4	108MHz 65 dBf (60dB)	108MHz	TC001		Maximum	
RF	5	90MHz 1kHz 75kHz devi.	90MHz	L001 L002	AC VTVM or Oscilloscope	Maximum	Repeat Steps 5 and 6 as necessary Signal input should be kept as low as possible. muting ... off
	6	106MHz 1kHz 75kHz devi.	106MHz	TC002 TC003		Maximum	
MPX	7	98MHz 65dBf (60dB) no mod.	98MHz	R215	Frequency counter	76kHz	



PRINTED CIRCUIT BOARD — PARTS LIST

D model

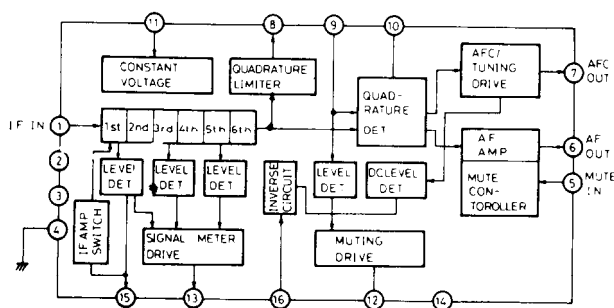
CIRCUIT NO. PARTS NO. DESCRIPTION

ICs		
Q103	222595	LA1231N
Q151	222497	LA1240
Q201	222453	HA1196
Q501	222541	LB1426
Transistors		
Q001	2211815	2SK19TM (GR)
Q002, Q003	2211723	2SC1923 (O)
Q101	2210823	2SC1675 (L-1)
Q901	2201034 or 2201035	2SD325 (D) or 2SD325 (E)
Diodes		
D101, D151	223145,	1S2076TD
	223105 or	1S1555 or
	223133	DS442X
D152	4000001 or	KB269 or
	4000068	VD1222
D901	223862	WL01
D902	223910 or	WZ120 or
	224111	GZA12-L
L.E.Ds		
D501—D504	225048	SLP-252B-04
D505	225046	SLP151B
D506, D507	225047	SLP251B
Lamp		
PL101	210054B	250mA, 6.3V
Coils & transformers		
L001	233106 or	NFA-3009 or
	233088-1	NFA-3001
L002	233178	NFRF-3015
L003	233232	NCH-1049
L004	233090	NFO-3003
L101	233148	NFIF-6010P
L102	233149	NFIF-6010S
L103	233105 or	NCH-1005 or
	233024	NCH-1501
L151	232086	NMA-3035
L153	232073	NMO-2008
L155	232041	NIT-0509
Ceramic filters		
X001	3010057 or	SFE-10, 7MA5Z or
X102	3010003	SFE10.7MA
X151	3010053	SFL-455B

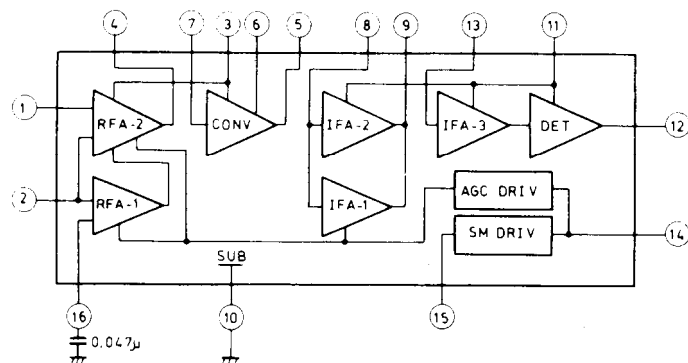
CIRCUIT NO. PARTS NO. DESCRIPTION

Capacitors		
VC001	3050004	NVC2-327SA, Variable
TC001	3060003	NTC-10P-02, Trimmer
C015, C114	352741009	10 μ F, 16V, Elect.
C105	352780339	3.3 μ F, 50V, Elect.
C107, C112	352784799	0.47 μ F, 50V, Elect.
C108	352780109	1 μ F, 50V, Elect.
C153	370133614	360pF $\pm$ 5%, 100V, APS
C159	352741009	10 μ F, 16V, Elect.
C164	352784799	0.47 μ F, 50V, Elect.
C165	352744709	47 μ F, 16V, Elect.
C167	352780339	3.3 μ F, 50V, Elect.
C168	352750479	4.7 μ F, 25V, Elect.
C171	352741009	10 μ F, 16V, Elect.
C201	352780229	2.2 μ F, 50V, Elect.
C207, C208	352784799	0.47 μ F, 50V, Elect.
C211, C212	352741009	10 μ F, 16V, Elect.
C213	352741019	100 μ F, 16V, Elect.
C214	370133614	360pF $\pm$ 5%, 100V, APS
C216	352780339	3.3 μ F, 50V, Elect.
C217	352780229	2.2 μ F, 50V, Elect.
C218	352780109	1 μ F, 50V, Elect.
C501	352741009	10 μ F, 16V, Elect.
C902	352754719	470 μ F, 25V, Elect.
C903	352742219	220 μ F, 16V, Elect.
C904	352751019	100 μ F, 25V, Elect.
Resistors		
R215	5225015	N10HR10KBD, Semi-fixed
R501	441625604	56 Ω , 1W, Metal oxide film
Switches		
S1, S2	25035259	NPS-242-L223, AM/FM selector Muting
Shielded plate		
	27150102	Front end
Screws		
	831130088	3STW + 8BQ, Tapping screw
Holder		
	27190121	L.E.D

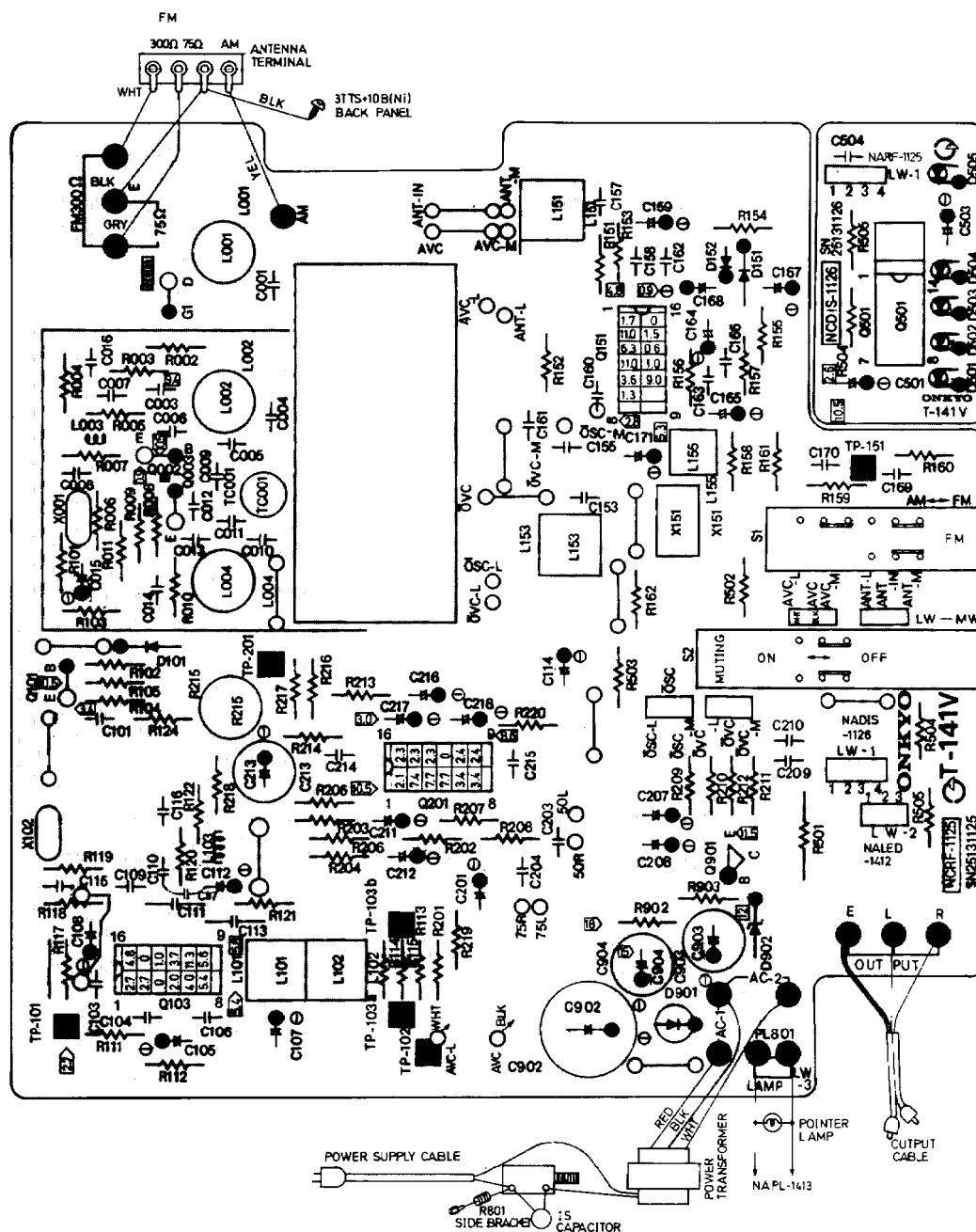
LA 1231N (FM IF system)



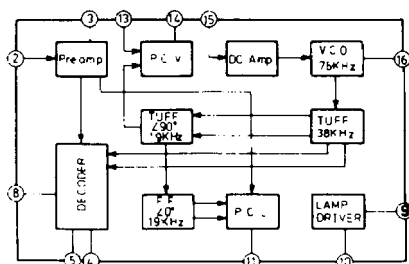
LA-1240 (AM radio system)



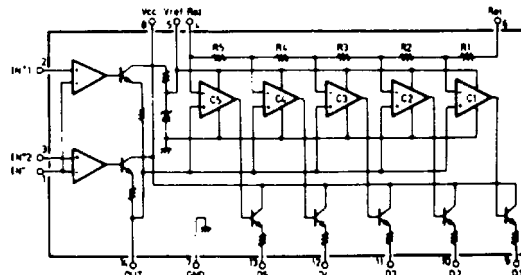
PRINTED CIRCUIT BOARD VIEW FROM COMPONENT SIDE
D model



HA1196 (MPX decoder)



LB1426 (Signal indicator drive)

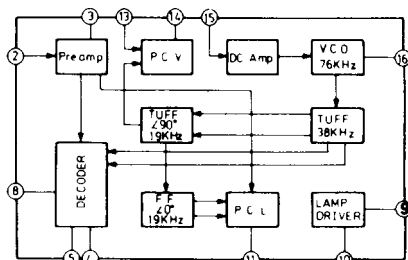


PRINTED CIRCUIT BOARD — PARTS LIST

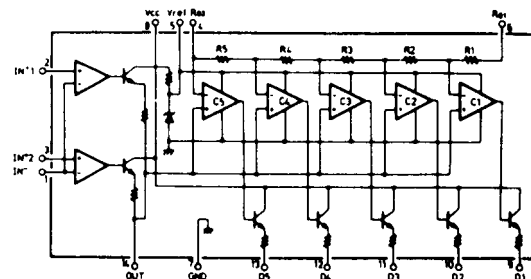
CIRCUIT NO.	PARTS NO.	DESCRIPTION
	ICs	
Q103	222595	LA1231N
Q151	222497	LA1240
Q201	222453	HA1196
Q501	222541	LB1426
	Transistors	
Q001	2211713	3SK73 (GR)
Q002, Q003	2211723	2SC1923 (O)
Q101, Q102	2210823	2SC1675 (L-1)
Q901	2201034 or 2201035	2SD325 (D) or 2SD325 (E)
	Diodes	
D101,D151	223145, 223105 or 223133	1S2076TD 1S1555 or DS442X
D152	4000001	KB269
D901	223862	WL01
D902	223910 or 224111	WZ120,or GZA12-L
	L.E.Ds	
D501—D504	225048	SLP-252B-04
D505	225046	SLP151B
D506,D507	225047	SLP251B
	Lamp	
PL101	210054B	250mA, 6.3V
	Coils & transformers	
L001	233106 or 233088-1	NFA-3009 or NFA-3001
L002	233178	NFRF-3015
L003	233232	NCH-1049
L004	233090	NFO-3003
L101	233148	NFIF-6010P
L102	233149	NFIF-6010S
L103	233105 or 233024	NCH-1005 or NCH-1501
L151	232086	NMA-3035
L153	232073	NMO-2008
L155	232041	NIT-0509
L201	233236	NMC-6027
	Ceramic filters	
X001, X101	3010057 or	SFE-10.7MA5Z
X102	3010003	SFE10.7MA
X151	3010053	SFL-455B

CIRCUIT NO.	PARTS NO.	DESCRIPTION
	Capacitors	
VC001	3050004	NVC2-327SA, Variable
TC001	3060003	NTC-10P-02, Trimmer
C015, C114	352741009	10 μ F, 16V, Elect.
C105	352780339	3.3 μ F, 50V, Elect.
C107, C112	352784799	0.47 μ F, 50V, Elect.
C108	352780109	1 μ F, 50V, Elect.
C153	370133614	360pF $\pm$ 5%, 100V, APS
C159	352741009	10 μ F, 16V, Elect.
C164	352784799	0.47 μ F, 50V, Elect.
C165	352744709	47 μ F, 16V, Elect.
C167	352780339	3.3 μ F, 50V, Elect.
C168	352750479	4.7 μ F, 25V, Elect.
C171	352741009	10 μ F, 16V, Elect.
C201	352780229	2.2 μ F, 50V, Elect.
C207, C208	352784799	0.47 μ F, 50V, Elect.
C211, C212	352741009	10 μ F, 16V, Elect.
C213	352741019	100 μ F, 16V, Elect.
C214	370133614	360pF $\pm$ 5%, 100V, APS
C216	352780339	3.3 μ F, 50V, Elect.
C217	352780229	2.2 μ F, 50V, Elect.
C218	352780109	1 μ F, 50V, Elect.
C501	352741009	10 μ F, 16V, Elect.
C902	352754719	470 μ F, 25V, Elect.
C903	352742219	220 μ F, 16V, Elect.
C904	352751019	100 μ F, 25V, Elect.
	Resistors	
R215	5225015	N10HR10KBD, Semi-fixed
R501	441625604	56 Ω , 1W, Metal oxide film
	Switches	
SI, S2	25035259	NPS-242-L223, AM/FM selector Muting
	Shielded plate	
	27150102	Front end
	Screws	
	831130088	3STW + 8BQ, Tapping screw
	Holder	
	27190121	L.E.D

HA 1196 (MPX decoder)



LB1426 (Signal indicator drive)



PRINTED CIRCUIT BOARD-PARTS LIST

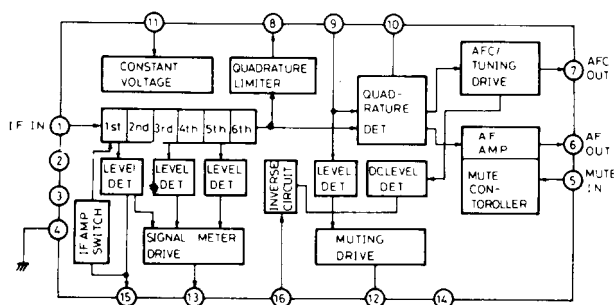
CIRCUIT NO. PARTS NO. DESCRIPTION

ICs		
Q103	222595	LA1231N
Q151	222497	LA1240
Q201	222453	HA1196
Q501	222541	LB1426
Transistors		
Q001	2211815	2SK19TM (GR)
Q002, Q003	2211723	2SC1923 (O)
Q101	2210823	2SC1675 (L-1)
Q901	2201034 or 2201035	2SD325 (D) or 2SD325 (E)
Diodes		
D101, D151	223145, 223105 or 223133	1S2076, 1S1555 or DS442X
D152	4000001 or 4000068	KB269 or VD1222
D901	223862	WL01\
D902	223910 or 224111	WZ120 or GZA12-L
L.E.Ds		
D501—D504	225048	SLP-252B-04
D505	225046	SLP151B
D506, D507	225047	SLP251B
Lamp		
PL101	210054B	250mA, 6.3V
Coils & transformers		
L001	233106 or 233088-1	NFA-3009 or NFA-3001
L002	233178	NFRF-3015
L003	233232	NCH-1049
L004	233090	NFO-3003
L101	233148	NFIF-6010P
L102	233149	NFIF-6010S
L103	233105 or 233024	NCH-1005 or NCH-1501
L151	232086	NMA-3035
L153	232073	NMO-2008
L155	232041	NIT-0509
Ceramic filters		
X001	3010057 or	SFE-10, 7MA5Z or
X102	3010003	SFE10.7MA
X151	3010053	SFL-455B

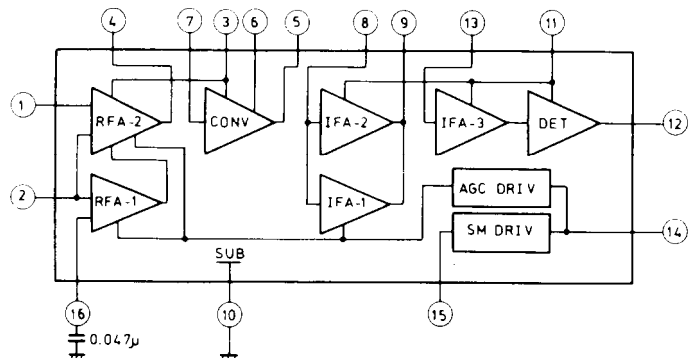
CIRCUIT NO. PARTS NO. DESCRIPTION

Capacitors		
VC001	3050004	NVC2-327SA, Variable
TC001	3060003	NTC-10P-02, Trimmer
C015, C114	352741009	10 μ F, 16V, Elect.
C105	352780339	3.3 μ F, 50V, Elect.
C107, C112	352784799	0.47 μ F, 50V, Elect.
C108	352780109	1 μ F, 50V, Elect.
C153	370133614	360pF $\pm$ 5%, 100V, APS
C159	352741009	10 μ F, 16V, Elect.
C164	352784799	0.47 μ F, 50V, Elect.
C165	352744709	47 μ F, 16V, Elect.
C167	352780339	3.3 μ F, 50V, Elect.
C168	352750479	4.7 μ F, 25V, Elect.
C171	352741009	10 μ F, 16V, Elect.
C201	352780229	2.2 μ F, 50V, Elect.
C207, C208	352784799	0.47 μ F, 50V, Elect.
C211, C212	352741009	10 μ F, 16V, Elect.
C213	352741019	100 μ F, 16V, Elect.
C214	370133614	360pF $\pm$ 5%, 100V, APS
C216	352780339	3.3 μ F, 50V, Elect.
C217	352780229	2.2 μ F, 50V, Elect.
C218	352780109	1 μ F, 50V, Elect.
C501	352741009	10 μ F, 16V, Elect.
C902	352754719	470 μ F, 25V, Elect.
C903	352742219	220 μ F, 16V, Elect.
C904	352751019	100 μ F, 25V, Elect.
Resistors		
R215	5225015	N10HR10KBD, Semi-fixed
R501	441625604	56 Ω , 1W, Metal oxide film
Switches		
S1, S2	25035259	NPS-242-L223, AM/FM selector
		Muting
S3	25065160	NSS-2273, De-emphasis selector
Shielded plate		
	27150102	Front end
Screws		
	831130088	3STW + 8BQ, Tapping screw
Holder		
	27190121	L.E.D

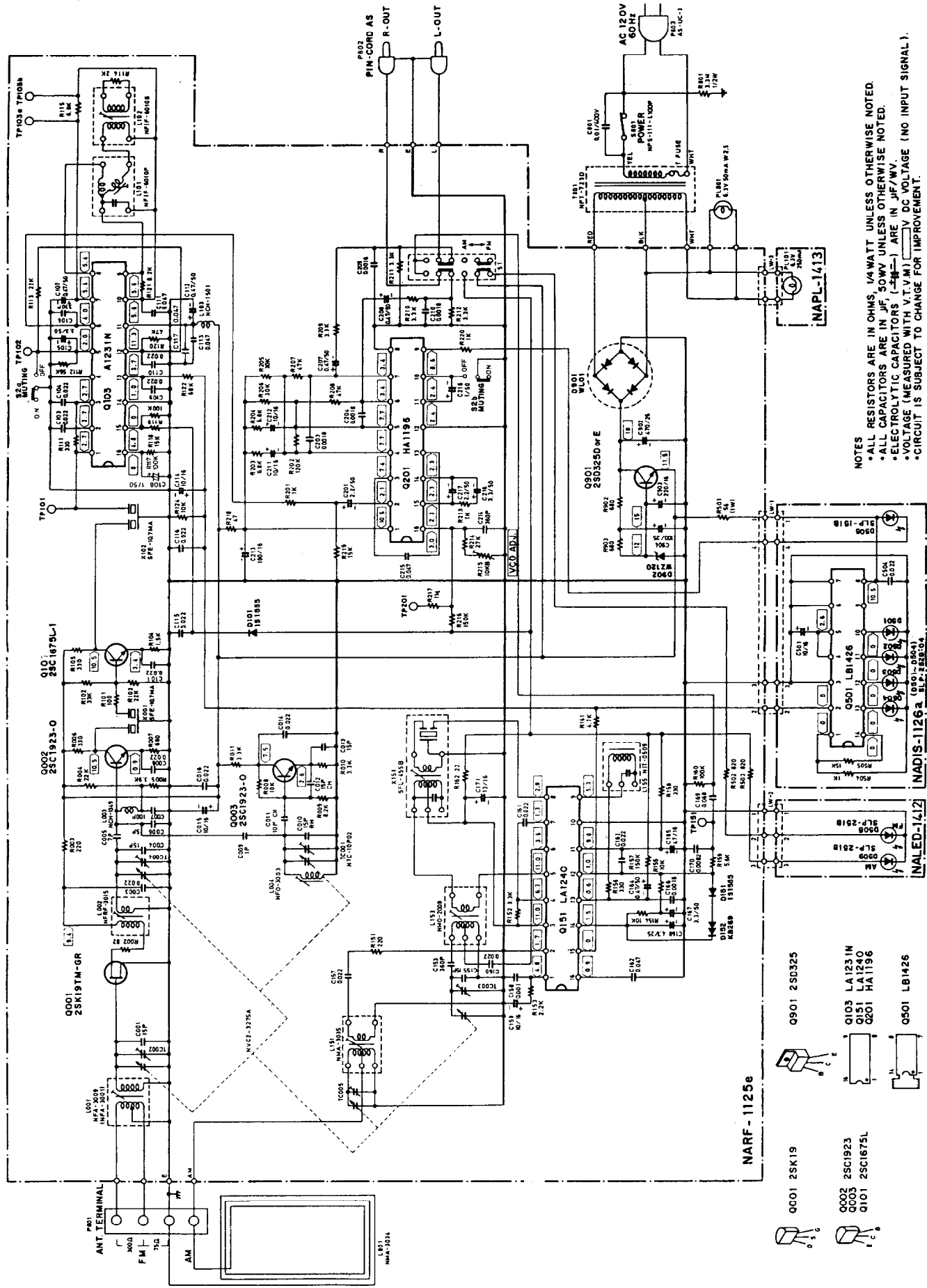
LA 1231N (FM IF system)



LA-1240 (AM radio system)



SCHEMATIC DIAGRAM 120V model



NOTES

- ALL RESISTORS ARE IN OHMS, 1/4WATT UNLESS OTHERWISE NOTED.
- ALL CAPACITORS ARE IN μF , 50WV UNLESS OTHERWISE NOTED.
- ELECTROLYTIC CAPACITORS (— $\frac{+}{-}$ —) ARE IN μF /WV.
- VOLTAGE MEASURED WITH V.T.V.M. V DC VOLTAGE (NO INPUT SIGNAL).
- CIRCUIT IS SUBJECT TO CHANGE FOR IMPROVEMENT.

ONKYO CORPORATION

PRINTED CIRCUIT BOARD — PARTS LIST

CIRCUIT NO. PARTS NO. DESCRIPTION

ICs
 Q103 222595 LA1231N
 Q151 222626 HA1197
 Q201 222453 HA1196
 Q501 222541 LB1426

Transistors
 Q001, Q152 2211815 2SK19TM (GR)
 Q002, Q003 2211723 2SC1923 (O)
 Q101 2210823 2SC1675 (L-1)
 Q153 2211254 2SC1815 (Y)
 Q154 2211454 2SA1015 (Y)
 Q901 2201034 or 2SD325 (D) or 2201035 2SD325 (E)

Diodes
 D101, D151 223145, 1S2076TD
 223105 or 1S1555 or
 223133 DS442X
 D152 4000001 or KB269 or
 4000068 VD1222
 D901 223862 WL01
 D902 223910 or WZ120 or
 224111 GZA12-L

L.E.D.s
 D501—D504 225048 SLP-252B-04
 D505 225046 SLP151B
 D508, D509 225047 SLP251B

Lamp
 PL101 210054B 250mA, 6.3V

Coils & transformers
 L001 233106 or NFA-3009 or
 233088-1 NFA-3001
 L002 233178 NFRF-3015
 L003 233232 NCH-1049
 L004 233090 NFO-3003
 L101 233148 NFIF-6010P
 L102 233149 NFIF-6010S
 L103 233105 or NCH-1005 or
 233024 NCH-1501
 L151 232086 NMA-3035
 L152 232091 MLMA-3038
 L153 232073 NMO-2008
 L154 232094 NLO-2021
 L155 232041 NIT-0509

Ceramic filters
 X001 3010057 or SFE-10.7MA5Z or
 X102 3010003 SFE10.7MA
 X151 3010053 SFL-455B

CIRCUIT NO. PARTS NO. DESCRIPTION

Capacitors
 VC001 3050008 NVC20FT327WD04, Variable
 TC001 3060003 NTC-10P-02, Trimmer
 C015, C114 352741009 10 μ F, 16V, Elect.
 C105 352780339 3.3 μ F, 50V, Elect.
 C107, C112 352784799 0.47 μ F, 50V, Elect.
 C108 352780109 1 μ F, 50V, Elect.
 TC151, TC153 3060010 NTC-20P09, Trimmer
 TC152, TC154 3060011 NTC-45P10, Trimmer
 C153 370133614 360pF $\pm$ 5%, 100V, APS
 C154 372521514 150pF $\pm$ 5%, 50V, Styrol
 C159 352741009 10 μ F, 16V, Elect.
 C164 352784799 0.47 μ F, 50V, Elect.
 C165 352741009 10 μ F, 16V, Elect.
 C167 352780339 3.3 μ F, 50V, Elect.
 C168 352750479 4.7 μ F, 25V, Elect.
 C171 352741009 10 μ F, 16V, Elect.
 C181, C182 352741009 10 μ F, 16V, Elect.
 C201 352780229 2.2 μ F, 50V, Elect.
 C207, C208 352784799 0.47 μ F, 50V, Elect.
 C211, C212 352741009 10 μ F, 16V, Elect.
 C213 352741019 100 μ F, 16V, Elect.
 C214 370133614 360pF $\pm$ 5%, 100V, APS
 C216 352780339 3.3 μ F, 50V, Elect.
 C217 352780229 2.2 μ F, 50V, Elect.
 C218 352780109 1 μ F, 50V, Elect.
 C501 352741009 10 μ F, 16V, Elect.
 C902 352754719 470 μ F, 25V, Elect.
 C903 352742219 220 μ F, 16V, Elect.
 C904 352751019 100 μ F, 25V, Elect.

Resistors
 R215 5225015 N10HR10KBD, Semi-fixed
 R501 441625604 56 Ω , 1W, Metal oxide film

Switches
 S1, S2 25035261 NPS-142-162-L225,
 LW/MW/FM selector

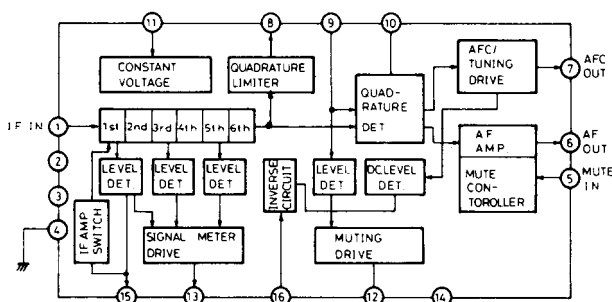
Shielded plate
 27150102 Front end

Screws
 831130082 3STW + 8BQ, Tapping screw

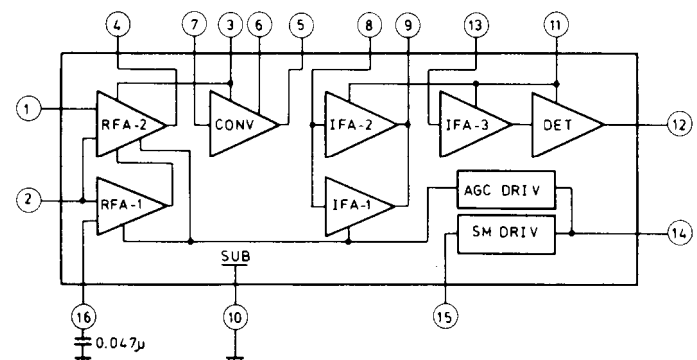
Holder
 27190121 L.E.D

BLOCK DIAGRAM

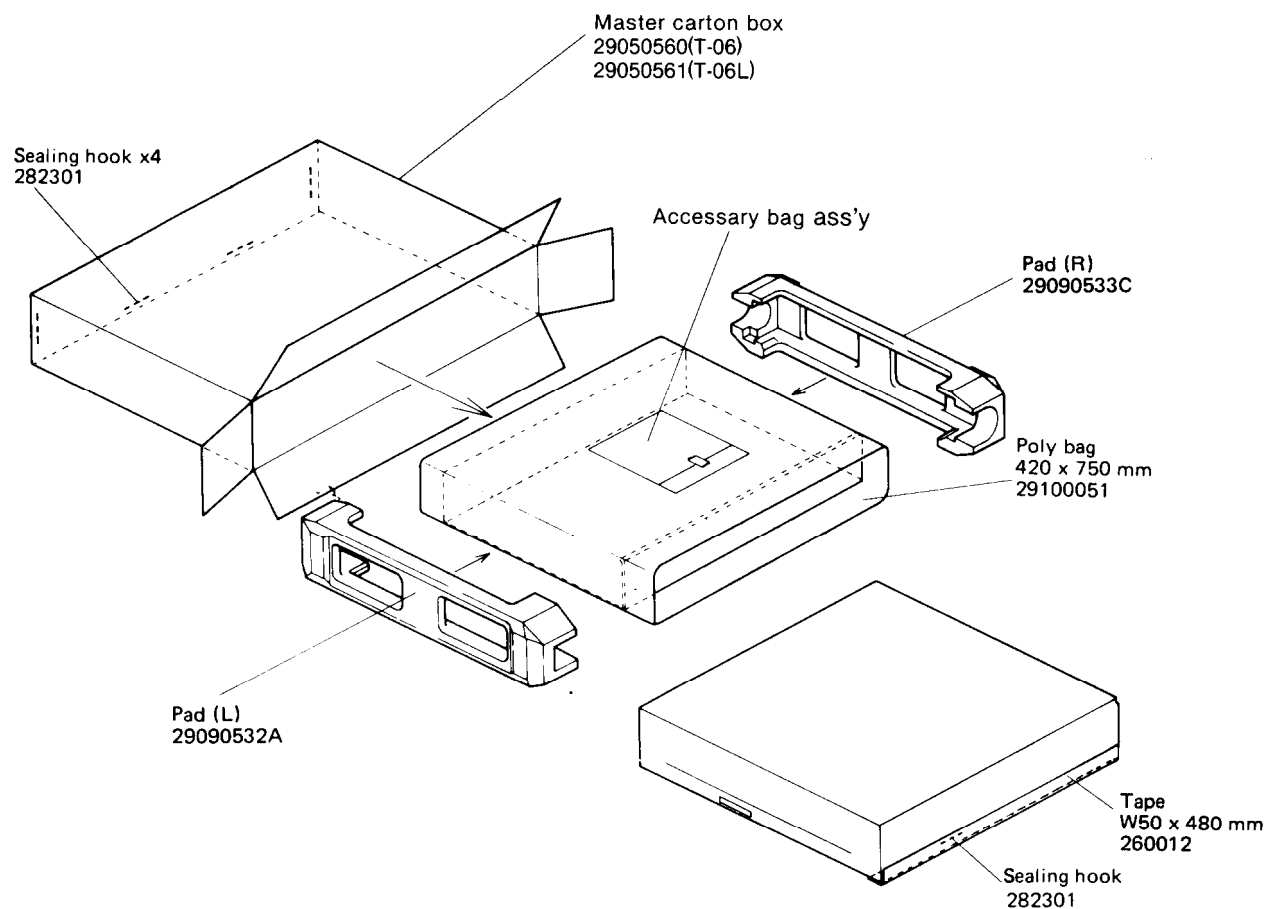
LA 1231N (FM IF system)



HA-1197 (AM radio system)



PACKING PROCEDURES



Accessory bag ass'y

Model	U.S.A.	120V	West Germany	220V (T-06/L)	120/220V
Instruction manual	29340611	29340611	29340612	29340612	29340612
FM antenna	292064A	292064A	292064A	292064A	292064A
Warranty card	29365003	—	29365005-3	—	—
Service station list	29358002	—	—	—	—
Conversion plug	—	—	—	—	25055040